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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,283	09/26/2001	Christian X. Campbell	01P17799US	1513

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Siemens Corporation
Intellectual Property Department
186 Wood Avenue South
Iselin, NJ 08830

EXAMINER

TRAN, HIEN THI

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,283

Applicant(s)

CAMPBELL ET AL.

Examiner

Hien Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 15-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/26/01 & 11/6/03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-14 in the reply filed on 10/19/04 is acknowledged.
2. Claims 15-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/19/04.

Drawings

3. The drawings are objected to because in Fig. 1, it appears that the reference numeral 20 is pointed to the flame, instead of the preheat burner as set forth on page 2, line 3; in Fig. 2, the lead line from "40" should be pointed to the washcoat beneath the catalyst material 26. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified

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and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings to comply with CFR 1.84(p)(5), e.g. they should include the reference sign(s) mentioned in the specification and vice versa.

Claim Objections

5. Claims 3, 7 and 14 are objected to because of the following informalities:

In claim 3, line 1 and claim 7, line 4 "further" should be deleted for clarity.

In claim 14, line 12 "the" should be deleted and --with the formula-- should be inserted after "hexaluminates".

Appropriate correction is required.

Specification

6. The disclosure is objected to because of the following informalities:

On page 5, line 8 it is unclear as to what "EB-TBC" stands for; in line 12 it is unclear as to what "TBC coating" stands for (see the remaining specification likewise).

On page 6, line 1 it is unclear as to what "EB-DVD or ESAVD" stands for; in line 28 it is unclear as to what "CVD" stands for.

Appropriate correction is required.

7. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 7 and 13 are rejected under 35 U.S.C. 102(a) as being anticipated by Pfefferle et al (6,272,863).

Pfefferle et al '863 discloses a catalytic combustor comprising: a catalytic element disposed downstream of the fuel-air mixing device (not shown) for receiving fuel-air mixture 11; the catalytic element comprising: a substrate 16; a thermal barrier coating 17 and a combustion catalyst 15 disposed on the barrier coating for reacting the fuel-air mixture (col. 3, line 16 to col. 4, line 50).

Instant claims 1, 7 and 13 structurally read on the apparatus of Pfefferle et al '863.

10. Claims 1, 7 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Pfefferle et al (4,603,547).

Pfefferle et al '547 discloses a catalytic combustor comprising: a catalytic element disposed downstream of the fuel-air mixing device (not shown) for receiving fuel-air mixture; the catalytic element comprising: a substrate 20; a thermal barrier coating 21 and a combustion catalyst 22 disposed on the barrier coating for reacting the fuel-air mixture (col. 2, line 26 to col. 3, line 67).

Instant claims 1, 7 and 13 structurally read on the apparatus of Pfefferle et al '547.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. The art area applicable to the instant invention is that of catalytic combustor.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

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14. Claims 3, 5-6, 9, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfefferle et al (6,272,863 or 4,603,547) in view of Kojima et al (5,840,434).

The apparatus of Pfefferle et al is substantially the same as that of the instant claims, but is silent as to whether the thermal barrier coating has a columnar grained microstructure having primary columns, secondary branches and tertiary branches.

However, Kojima et al discloses provision of a thermal barrier coating is deposited on the substrate by electron beam vapor deposition and as a result has a columnar grained microstructure with a plurality of primary columns, secondary branches and tertiary branches for providing sufficient endurance under severe heat load conditions of high operation temperature.

It would have been obvious to one having ordinary skill in the art to substitute the thermal barrier coating of Kojima et al for the thermal barrier coating of Pfefferle et al so as to provide a system having sufficient endurance under severe heat load conditions of high operation temperature.

15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pfefferle et al (6,272,863 or 4,603,547) in view of Hasz et al (5,914,189) or Groppi et al (BaFeAl_(12-x)O₁₉ System ... Combustion).

The apparatus of Pfefferle et al is substantially the same as that of the instant claims, but is silent as to the specific catalyst material as claimed.

However, Hasz et al discloses the conventionality of providing a thermal barrier coating having material, such as spinels, on the surface of the thermal barrier coating for protecting the thermal barrier coating. Groppi et al shows the conventionality of using hexaluminates as combustion catalysts

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It would have been obvious to one having ordinary skill in the art to alternately use such material, e.g. spinels, as taught by Hasz et al in the apparatus of Pfefferle et al, for protecting the thermal barrier coating thereof or to substitute the catalyst material of Groppi et al for the catalyst material in the modified apparatus of Pfefferle et al for the known and expected results of obtaining the same results in the absence of unexpected results.

16. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfefferle et al (6,272,863 or 4,603,547) in view of Hughes (5,985,220) and Dalla Betta et al (5,518,697).

The apparatus of Pfefferle et al is substantially the same as that of the instant claims, but is silent as to whether a ceramic wash-coat may be placed under the catalyst layer.

However, Hughes discloses the conventionality of providing a thermal barrier coating locating beneath the washcoats and catalyst material thereof. Dalla Betta et al discloses the conventionality of providing a ceramic wash-coat under the catalyst layer to improve the stability and performance of the catalyst material.

It would have been obvious to one having ordinary skill in the art to provide a ceramic wash-coat on top of the thermal barrier coating as taught by Hughes and under the catalyst layer as taught by Dalla Betta et al in the modified apparatus of Pfefferle et al for improving the stability and performance of the catalyst material as taught by Dalla Betta et al.

17. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfefferle et al (6,272,863 or 4,603,547) in view of Kojima et al (5,840,434) as applied to claims 3, 5-6, 9, 11-12 above, and further in view Hughes (5,985,220) and Dalla Betta et al (5,518,697).

The same comments with respect to Hughes and Dalla Betta et al apply.

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Double Patenting

18. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19. Claims 1-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 10/158,372. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are directed to the same conceptual invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hien Tran

HT

Hien Tran
Primary Examiner
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